**SUSQI PROJECT REPORT**

**Project Title: Introducing a One-Stop Haematuria Clinic and Decarbonising the Flexible Cystoscopy Tray to Reduce Unnecessary Hospital Visits**

**Start date of Project: February 27th 2026**

**Date of Report: 15th May 2026**

**Team Members:**

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   (Representing the Urology Department as part of the Coventry and Warwickshire Green Team Competition)

## Background

The haematuria diagnostic pathway is a key route for the identification and treatment of bladder cancer. In 2025, our urology service received approximately 1,188 referrals for visible and non-visible haematuria, representing a significant proportion of outpatient urology activity. Patients are assessed within an acute hospital setting and typically progress through a traditional pathway involving multiple appointments across different days.

The mean age of patients referred on the haematuria pathway is 81 years, meaning many patients have reduced mobility and rely heavily on relatives or carers to attend hospital appointments. This dependency frequently requires relatives to take time off work or adjust personal commitments, creating a notable social and economic burden. Repeated hospital visits can therefore disrupt family life, employment, and carers' wellbeing, as well as increase stress and anxiety for patients.

Within the current traditional pathway, patients attend up to four hospital visits from referral through to diagnosis and treatment. These visits often include initial flexible cystoscopy, CT urogram (for visible haematuria) or ultrasound (for non-visible haematuria), transurethral laser ablation (TULA) or transurethral resection of bladder tumour (TURBT) and a follow-up appointment for results. This fragmented approach contributes to prolonged diagnostic timelines, and the service is frequently unable to meet Faster Diagnosis Standard (FDS) targets for timely diagnosis and treatment of suspected cancer.

In addition to the clinical and social burden, repeated hospital attendances increase healthcare related carbon emissions through patient travel, clinic utilisation, and repeated use of consumables. Given the age profile of the patient population and the volume of referrals, there is a strong case for pathway redesign to improve efficiency, reduce unnecessary visits, and deliver more patient-centred care. In addition, flexible cystoscopy procedures rely heavily on single-use consumables and reusable textiles that require energy-intensive laundering. Patient gowns used for flexible cystoscopy represent a hidden but meaningful environmental burden, as reusable gowns require frequent washing, drying, and transport, all of which carry a substantial carbon footprint.

This project proposed the introduction of a One-Stop Haematuria Clinic, allowing investigations to be completed in a single visit where clinically appropriate, alongside sustainable changes to flexible cystoscopy practice. The 'getting it right first time' (GIRFT) urology programme recommends streamlining haematuria pathways to reduce avoidable hospital visits, improve diagnostic speed, and ensure more efficient use of resources. Introducing a One-Stop Haematuria Clinic, where appropriate investigations are completed in a single visit, directly supports these recommendations while also improving patient experience and reducing environmental and economic waste.

As part of this project, the team also proposed a change in practice from the routine use of reusable patient gowns to allowing patients to wear their own personal clothing during flexible cystoscopy where clinically appropriate. This approach maintains patient dignity and safety while offering clear sustainability benefits by reducing energy use, water consumption, and emissions associated with laundering healthcare textiles.

This project was selected as the topic for the Green Team Competition, with the Urology Department being represented. It was led by a multidisciplinary urology team well-placed to identify inefficiencies within the haematuria pathway and deliver sustainable, evidence-based improvements. The project aligned with organisational priorities around patient-centred care, quality improvement, and the delivery of NHS Net Zero ambitions.

## Aims:

By May 2026, we aimed to reduce waste and pathway-related carbon dioxide equivalent ($CO_2e$) emissions by:

- Reducing patient hospital attendances for haematuria investigations by at least 30% through the introduction of a One-Stop Haematuria Clinic.

- Reducing environmental impact of flexible cystoscopy by removing unnecessary drapes and switching from hospital gowns to patients' own clothing where clinically appropriate and swapping from 100ml to 500ml saline irrigation bags.

## Methods

This project was delivered using a Sustainable Quality Improvement (SusQI) methodology, integrating quality improvement principles with environmental, social, and economic sustainability considerations. The methodology focused on identifying inefficiencies within the haematuria diagnostic pathway and implementing low-risk, evidence-based changes that improved patient experience while reducing environmental impact.

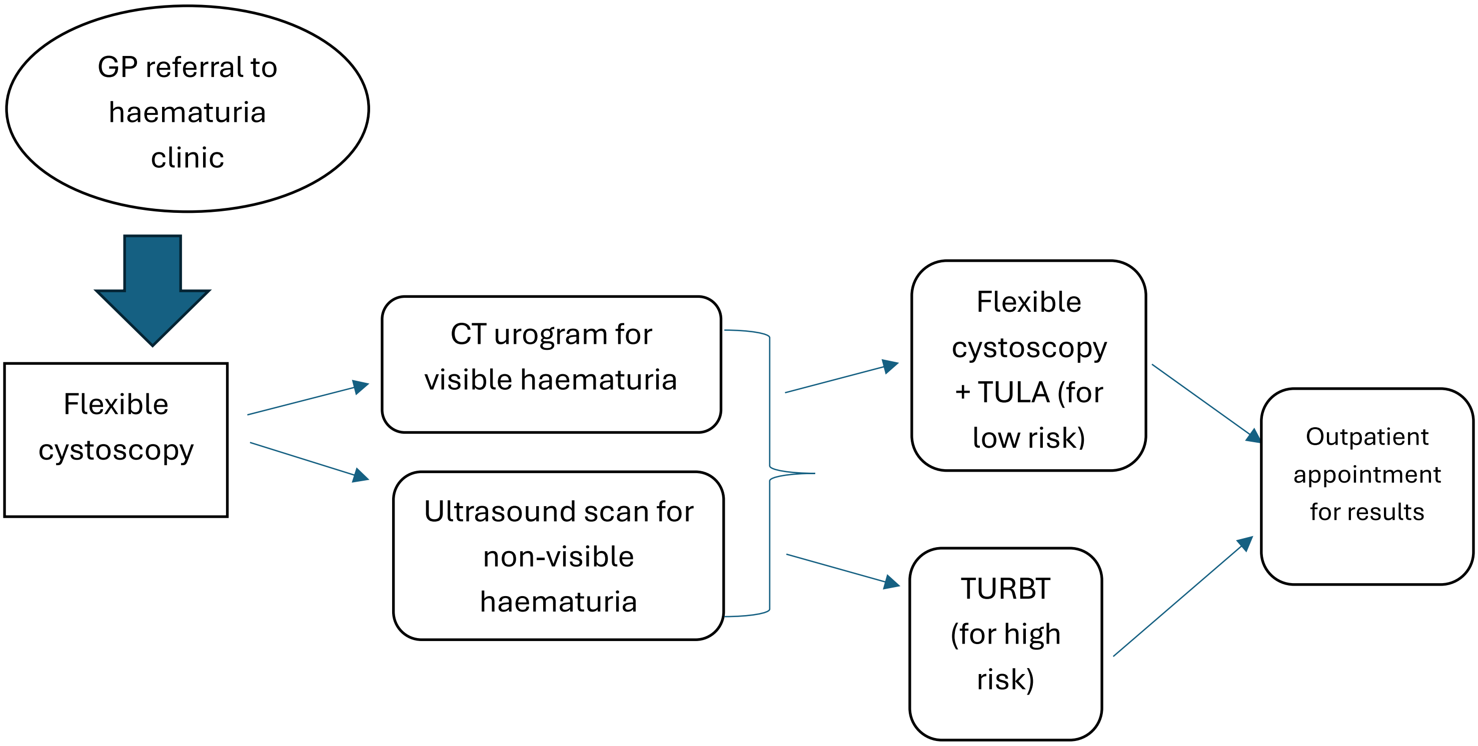
**Identification of Improvement Opportunities**

The project commenced with the team identifying key areas of waste generation across several urological pathways, alongside opportunities to improve pathway efficiency and patient experience. A range of potential project ideas were explored, including the introduction of a One-Stop Haematuria Clinic, implementation of patient-led trial without catheter (TWOC) following robotic-assisted radical prostatectomy (RARP), enabling patients to self-administer bladder instillation treatments at home, and introducing patient-stratified follow-up (PSFU) for patients following radical treatment for prostate cancer.

Each option was evaluated against social, environmental, and economic sustainability criteria. Following this assessment, the team agreed to progress with the introduction of a One-Stop Haematuria Clinic alongside decarbonisation of the flexible cystoscopy tray, as these interventions were identified as having the greatest potential to improve patient experience, reduce unnecessary hospital visits, and deliver meaningful sustainability benefits.

The next step involved pathway mapping of the existing haematuria diagnostic process, from referral through to diagnosis and treatment (see figure 1). This exercise identified that patients typically attended up to four separate hospital visits, often spread over several weeks in the traditional pathway. These visits commonly included flexible cystoscopy, diagnostic imaging, flexible cystoscopy with transurethral laser ablation (TULA) or transurethral resection of bladder tumour (TURBT), followed by a review appointment.

**Figure 1: Pathway Diagram for Traditional Haematuria Clinic**




Baseline service data identified ongoing challenges in meeting the Faster Diagnosis Standard (FDS), which requires patients to receive a diagnosis within 28 days of referral. These challenges were largely attributed to delays arising from multiple sequential appointments within the traditional haematuria pathway. Patient demographic data showed a mean age of approximately 81 years, with many patients dependent on relatives or carers for transport to hospital appointments.

Key stakeholders, including urology consultants, nursing staff, radiology, and clinic coordinators, were engaged early to ensure feasibility and clinical safety.

Prior to implementation, patient questionnaires were introduced to understand patient preferences regarding longer single visits versus multiple shorter visits. A pilot phase was planned to test clinic flow, staffing requirements, and patient tolerance, with iterative refinement based on feedback.

In parallel, a review of flexible cystoscopy practice identified high-volume use of consumables, particularly tray items, saline irrigation, and reusable patient gowns requiring frequent laundering, as key contributors to the environmental footprint of the pathway; consequently, a structured review of the flexible cystoscopy tray was undertaken, with tray audits conducted in collaboration with clinical staff to distinguish essential items required for patient safety from those that were unnecessary, overused, or could be safely removed or rationalised. The sterile drape was removed as it was considered unnecessary. The saline irrigation bag was reduced from 1000ml to 500ml.

**Implementation of Interventions**

**1. Introduction of a One-Stop Haematuria Clinic**

To address inefficiencies within the traditional haematuria pathway, a One-Stop Haematuria Clinic model was developed and implemented (see figure 2). This model consolidated clinically appropriate investigations into a single visit, enabling patients with visible and non-visible haematuria to undergo flexible cystoscopy, urine testing, and imaging (where indicated), with the potential for same-day clinical decision-making and onward treatment planning.

Following pathway mapping and stakeholder engagement, the Urological Investigation Unit (UIU) was formally launched on 5 May 2026, at which point the One-Stop Haematuria Clinic became operational. Patients were seen immediately from the date of launch, with no delay between service establishment and clinical activity.

Prior to launch, staff education and engagement was undertaken to support safe and effective implementation. This included briefing urology nursing staff, clinic coordinators, and relevant medical staff on the redesigned pathway, clinic flow, patient selection criteria, and documentation requirements. Education focused on ensuring staff understanding of the clinical rationale, expected patient journey, and the sustainability benefits of reducing repeat attendances. Opportunities were also provided for staff to raise concerns and provide feedback, which informed final refinements to the clinic process.

Patient information and communications were updated to support the transition to a one-stop model. Patients were informed in advance that their appointment may be longer than a traditional clinic visit, as multiple investigations could be completed on the same day. Information was provided verbally and through appointment correspondence, explaining the benefits of the one-stop approach, including fewer hospital visits, faster diagnosis, and reduced disruption to daily life. This helped to manage expectations and improve patient preparedness and acceptance of the new pathway.

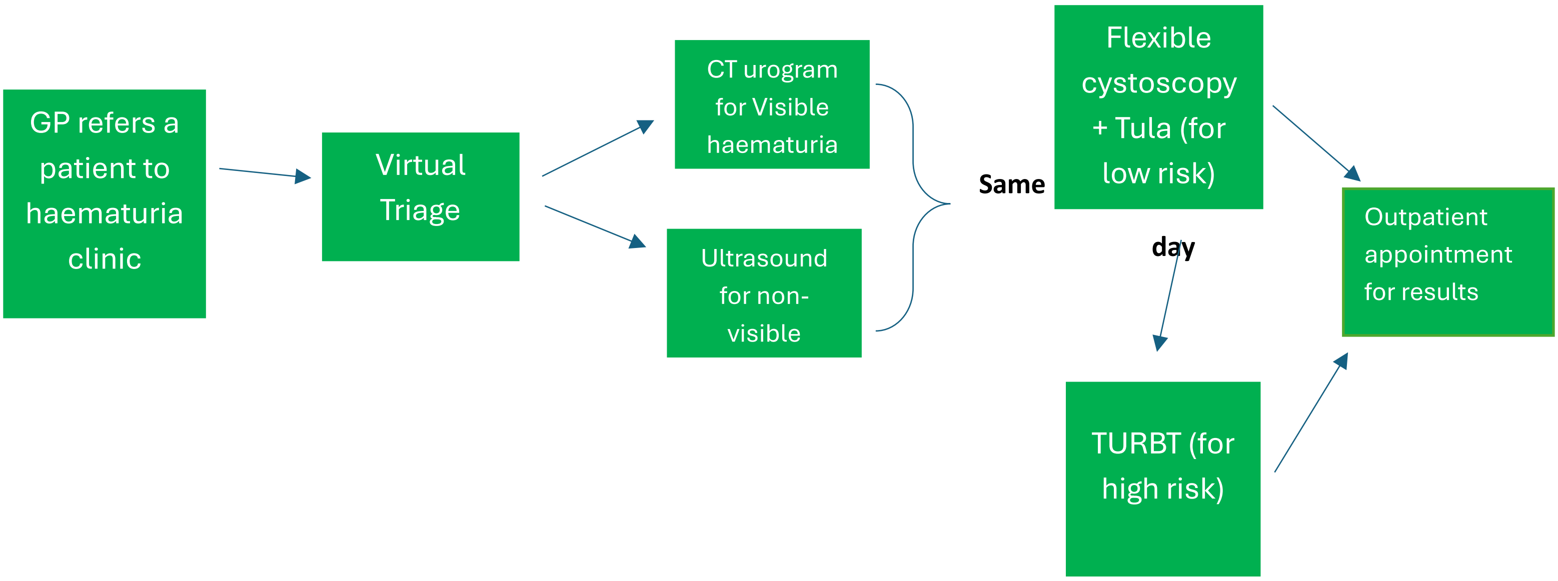
The move to the One-Stop Haematuria Clinic represented a deliberate shift away from sequential appointments toward a more coordinated, patient-centred approach. Ongoing feedback from patients and staff is being collected to support continuous improvement and inform decisions regarding wider rollout and sustainability of the model.

The design of the clinic was informed by:

- GIRFT urology recommendations
- Local pathway data
- Patient experience considerations

Scheduling models were reviewed to accommodate longer single appointments while avoiding bottlenecks.

**Figure 2: Pathway Diagram for One Stop Haematuria Clinic**




### 2. Decarbonising the Flexible Cystoscopy Tray

Specific actions included:

- Avoiding a sterile cystoscope drape by placing it on the decontamination storage tray or cystoscope packaging.
- Rationalising irrigation practice by reducing saline volume from 1000ml to 500 ml where clinically appropriate.

All proposed changes were discussed with procurement and infection prevention teams to ensure full compliance with clinical safety, infection control, and governance standards. To support staff engagement with the reduction in irrigation volume from 1 litre to 500 ml saline bags, the rationale for the change was clearly communicated to clinical staff, including evidence that the smaller volume was clinically appropriate for most flexible cystoscopy procedures and offered environmental and cost benefits.

The change was introduced incrementally, allowing staff to trial the 500 ml irrigation bags in routine practice and provide feedback on usability and clinical adequacy. Staff concerns were actively encouraged and addressed, and reassurance was provided that 1 litre bags would remain available if clinically required.

### 3. Switching from Reusable Patient Gowns to Personal Clothing

As part of reducing the environmental impact of flexible cystoscopy, the project introduced a change in practice from the routine use of reusable patient gowns to allowing patients to wear their own personal clothing during flexible cystoscopy where clinically appropriate.

This change was identified following recognition that reusable gowns, although not single-use, required energy-intensive laundering, including washing, drying, and transport, contributing to the pathway's carbon footprint.

Implementation involved:

- Clinical risk assessment to ensure patient safety, dignity, and comfort.
- Development of clear guidance for patients on appropriate clothing.
- Engagement with nursing staff to standardise practice.
- Updating local standard operating procedures.

Patients were informed in advance of appointments, and staff were supported through education and feedback sessions. The approach was designed to be patient-centred, offering flexibility where gowns remained clinically necessary.

**Testing, Learning, and Adaptation**

All three interventions were implemented using a pilot and test-of-change approach, enabling real-time learning and iterative improvement. Feedback from both staff and patients was actively sought throughout the process and used to inform ongoing refinements to implementation. For example, appointment correspondence was updated to clearly inform patients that they may be required to remain in clinic for a longer period to complete all required investigations on the same day. This iterative approach ensured that patient safety, quality of care, and clinical effectiveness remained central throughout the project.

**Stakeholder Engagement and Resources**

Stakeholders included urology consultants, nursing staff, radiology, procurement, infection prevention and control, sustainability leads, and patients. Engagement focused on shared ownership of the project and alignment with Trust priorities.

No initial capital investment was required. The project relied on service redesign, staff engagement, and optimisation of existing resources.

## Measurement

The following measures were used to evaluate the impact of the project:

- Number of hospital attendances per patient on the haematuria pathway before and after introduction of the One-stop Haematuria Clinic.
- Time from GP referral to first haematuria clinic assessment.
- Time from referral to diagnosis, measured against the Faster Diagnosis Standard (28 days).
- Number of flexible cystoscopy procedures performed per patient episode.
- Number and type of consumables used per flexible cystoscopy procedure, including saline irrigation volumes, drapes, and patient gowns.
- Volume and weight of clinical waste generated from flexible cystoscopy procedures.
- Patient-reported experience measures collected via questionnaires.

- Staff feedback on clinic efficiency and workflow.

Baseline data was compared with post-implementation data to assess impact.

### *Patient Outcomes*

Patient outcomes are being evaluated through a combination of process and outcome measures to ensure that the redesigned pathway improved patient experience without compromising clinical safety or effectiveness.

Adherence to the Faster Diagnosis Standard (FDS) is being monitored by measuring the time from GP referral to confirmed diagnosis (or cancer exclusion) for patients on the haematuria pathway, with the aim of ensuring that patients receive a diagnosis within 28 days of referral. Data is collected prospectively and compared against baseline performance from the traditional pathway.

In addition, referral-to-assessment time is being measured to assess compliance with the 14-day referral-to-specialist review standard, ensuring that patients are seen in a timely manner following GP referral. Time from diagnosis to treatment is also being monitored to assess alignment with the 31-day treatment standard.

Clinical safety and quality of care are being assessed through:

- Monitoring of complication rates associated with flexible cystoscopy and related procedures.
- Review of incident reporting systems (e.g. Datix) for any safety concerns arising from pathway changes.
- Ongoing clinical oversight by consultants to ensure adherence to national and local guidelines.

Patient-reported experience is being captured through questionnaires to assess perceptions of:

- Convenience of a one-stop clinic model.
- Anxiety levels related to waiting times and diagnosis.
- Overall satisfaction with care.

Regular review of these measures ensures that the redesigned pathway continues to deliver safe, effective, and patient-centred care, while supporting improvements in timeliness and efficiency.

### *Population Outcomes*

The haematuria pathway serves an older patient population, with a mean age of 81 years, many of whom rely on relatives or carers for transport. Reducing the number of hospital visits may improve access to care for patients with mobility limitations and those from more vulnerable groups.

At a population level, the project has the potential to reduce health inequalities by improving access to timely diagnostics, supporting earlier diagnosis of bladder cancer, and reducing the burden placed on carers. Although long-term population level data is not available during the pilot phase, existing evidence supports streamlined diagnostic pathways as a means of improving equity and access to care.

**Environmental Sustainability**

Data was collected for patients presenting with visible or non-visible haematuria from 1st January 2025 to 31st December 2025 as summarised in Table 1 below. A total of 1,188 patients were seen during this period on the existing haematuria pathway.

**Table 1. Components of existing and new pathways**

| Step in pathway | Pathway 1<br><br>(existing pathway) % of patients | Pathway 2<br><br>(new pathway) % of patients |
|---|---|---|
| GP referral | 2-week wait (100%) | 2-week wait (100%) |
| Flexible cystoscopy | Visit 1 (100%) | Visit 1 (100%) |
| Imaging (CT or ultrasound) | Visit 2 (100%) | Visit 1 (100%) |
| Treatment (TULA) | Visit 3 (2.5%) | Visit 1 (2.5%) |
| Treatment (TURBT) | Visit 3 (2.5%) | Visit 2 (2.5%) |
| Results | Visit 4: 5% delivered face to face | Visit 3: 1.25% (50% of TURBT patients have normal results and reassured by phone) |

A process- based carbon footprint analysis was carried out for patient travel and consumables. The patient travel emissions were based on miles driven by patients using a factor of 0.243 $kgCO_2e$ per mile, as published by the Department for Transport Travel survey for patient travel. This factor is inclusive of fuel and well-to-tank emissions.

In addition, one single use patient drape (measuring 150 X 90cm) per patient was removed from the equipment used. Secondly, one set of reusable clothing per patient was removed and patients now wear their own clothes for the flexible cystoscopy. Thirdly, the volume of saline required to fill the bladder was changed from 1 litre to 500ml. The analysis of these three elements included greenhouse gas (GHG) emissions associated with primary materials production, transport, and disposal. The activity data was converted into GHG emissions using carbon conversion factors from the 2025 UK Government Greenhouse Gas Conversion Factors database UK DESNZ Database. For end-of-life treatment, disposable equipment was assumed to be disposed of as clinical waste, while the packaging waste was assumed to be dry mixed recyclable with the corresponding emission factors taken from Rizan et al., 2020.

**Economic Sustainability**

Financial data was be obtained from procurement and service leads where available. Costs and savings considered were be limited to those attributable to the Trust and included:

- Reduced procurement of consumables (e.g. saline irrigation bags, drapes, gowns).
- Reduced waste disposal costs of consumables.

- Improved staff efficiency through reduced duplication of appointments.
- Reduced administrative burden associated with booking and managing multiple visits.

No significant capital investment was required to implement the project. Any implementation costs are limited to staff time and pathway redesign. Financial savings to patients or other organisations will be discussed under social sustainability rather than included here.

**Social Sustainability**

The project is expected to deliver positive social impacts for patients, carers, and staff. Fewer hospital visits reduce the need for patients and relatives to take time off work, decrease travel burden, and lessen disruption to social and family life. This is particularly relevant given the advanced age of the patient population and reliance on carers. It could take up to 3-4 hrs of a patient's day to attend an outpatient appointment including travel. The cost of avoided patient or carer travel was calculated, using HMRC business travel mileage (£0.55 per mile) and local car parking charges (£4.40 per visit).

Patient experience data was collected through questionnaires to capture perceptions of convenience, anxiety, and overall satisfaction. Potential staff social outcomes include improved workflow efficiency, reduced duplication of work, and increased engagement in sustainability focused improvement aligned with Trust values.

## Results

**Patient Outcomes**

The introduction of the One-stop Haematuria Clinic has demonstrated improvements in the timeliness and patient-centredness of care, while maintaining clinical safety and effectiveness.

By consolidating investigations into a single visit, the pathway reduces delays associated with multiple sequential appointments. This supports improved adherence to the Faster Diagnosis Standard (FDS), with patients more likely to receive a diagnosis within the 28-day target timeframe. In addition, earlier completion of investigations facilitates more timely clinical decision-making and reduces delays to treatment, supporting compliance with national cancer waiting time standards. It was beyond the scope of this project to formally quantify this saving.

Reducing the number of hospital attendances from up to four visits to one or two visits for most patients, has improved the efficiency of the diagnostic pathway without compromising the quality of care delivered. Diagnostic processes, including flexible cystoscopy and imaging, continue to follow national guidelines, and no changes have been made that would adversely affect diagnostic accuracy.

Clinical safety has been maintained throughout the implementation of the redesigned pathway. There has been no indication of increased complication rates or safety concerns related to flexible cystoscopy or associated procedures. Ongoing monitoring through incident reporting systems and clinical oversight ensures that any emerging risks are identified and addressed promptly.

Patient-reported experience suggests that reduced waiting times for diagnosis and fewer hospital visits contribute to lower anxiety levels and improved overall satisfaction with care. The ability to receive investigations and, where appropriate, results more quickly has been positively received by patients.

**Environmental sustainability:**

Carbon emissions associated with patient travel for the bladder cancer diagnostic and treatment pathway were calculated for two models of care (Pathway 1 and Pathway 2), as shown in Tables 2 and 3, based on 1,188 patients per year using our service. The average return travel distance used for the carbon emissions for our patient cohort, was 21.84 miles per hospital attendance. Assumptions were made that 2.5 of patients (30 per year) required TULA and 2.5% (30) required TURBT, with a total of 5% of patients (60 per year) requiring results to be provided. The analysis demonstrates a substantial reduction in emissions following the redesign of the patient pathway.

Table 2: Carbon emissions associated with pathway 1 (current pathway)

| | **Pathway 1 Percentage of patients** | **Emissions ($kgCO_2e$)** |
|---|---|---|
| GP referral (2WW pathway) | 100% | |
| Visit 1*: Imaging (CT or ultrasound) | 100% | 6,312.64 |
| Visit 2*: Flexible cystoscopy | 100% | 6,312.64 |
| Visit 3*: Treatment (TULA) | 2.5% (30) | 159.41 |
| Visit 3*: Treatment (TURBT) | 2.5% (30) | 159.41 |
| Visit 4*: Results | 5% delivered face to face | 318.82 |
| **Total** | | **13,262.93** |

Table 3. Carbon emissions associated with pathway 2 (new pathway)

| | **Pathway 2 Percentage of patients** | **Emissions ($kgCO_2e$)** |
|---|---|---|
| GP referral (2WW pathway) | 100% | |

| | | |
|---|---|---|
| Visit 1*: Imaging (CT or ultrasound), Flexible cystoscopy, and Treatment (TULA) (where appropriate) | 100% | 6,312.64 |
| Visit 2*: Treatment (TURBT) | 2.5% (30) | 159.41 |
| Results (20min phone call) | 50% of TURBT patients have normal results and reassured by phone | 30.00 |
| Visit 3*: Results post TURBT in person | 50% of TURBT patients have abnormal results and reviewed in clinic | 79.71 |
| **Total** | | **6,581.76** |

**Based on average return trip of 21.88 miles per visit*

**Pathway 1: Multiple separate visits**

In Pathway 1, patients attend multiple separate hospital visits, including an initial flexible cystoscopy, a subsequent visit for imaging (CT or ultrasound), a return visit for treatment where required, and a further visit to receive results. Travel-related carbon emissions for each visit were calculated using an average 16-mile return journey.

Under this pathway, 100% of patients attend separate visits for flexible cystoscopy and imaging, each visit contributing 6,312.64 $kgCO_2e$. A small proportion of patients (approximately 2–3%) require treatment with either TULA or TURBT, contributing 159.41 $kgCO_2e$. Results are delivered face to face for approximately 4–6% of patients, contributing 318.82 $kgCO_2e$. The total yearly carbon emissions associated with patient travel for Pathway 1 are 13,262.93 $kgCO_2e$.

**Pathway 2: Same-day investigation and streamlined follow-up**

Pathway 2 was redesigned to reduce the number of hospital visits required. Under this model, flexible cystoscopy, imaging (CT or ultrasound), and TULA (where appropriate) are performed on the same day, reducing repeat travel. Patients requiring TURBT attend for a second visit only where necessary.

Results management is further optimised:

- 50% of TURBT patients (15 patients) with normal results are informed and reassured via a 20-minute telephone consultation, generating 30.00 $kgCO_2e$.
- The remaining 50% of TURBT patients (15 patients) with abnormal results attend a face-to-face clinic appointment, contributing 79.71 $kgCO_2e$.

The combined first visit contributes 6,312.64 $kgCO_2e$, while TURBT treatment (required in 2–3% of patients) contributes 159.41 $kgCO_2e$. The total yearly carbon emissions for Pathway 2 are 6,581.76 $kgCO_2e$, saving 6,681 $kgCO_2e$ per year.

The carbon footprint of a single use disposable drape was 0.207 $kgCO_2e$, if removed from flexible cystoscopy packs this would save 246 $kgCO_2e$ per year. The carbon footprint per use for a single reusable patient clothing was 0.05804 $kgCO_2e$. If their use was avoided by all 1,188 patients per year, this would save 68 $kgCO_2e$ per year. The reduction in emissions changing from 1 litre of saline to 500ml is 100.9 $kgCO_2e$ per year, see table 4 below.

Table 4. Carbon emissions for reducing saline irrigation bag

| | Carbon footprint per item ($kgCO_2e$) | Emissions (total) $kgCO_2e$* |
|---|---|---|
| *Materials* | | |
| Saline infusion 500ml | 0.054 | 64.07 |
| Saline infusion 1000ml | 0.117 | 139.45 |
| Saving | 0.06 | 75.38 |
| *Waste* | | |
| Saline infusion 500ml | 0.018 | 21.691 |
| Saline infusion 1000ml | 0.039 | 47.209 |
| Saving | 0.021 | 25.52 |
| **Total saving** | | **100.9** |

*Based on 1188 patients

**Overall Impact**

Transitioning from Pathway 1 to Pathway 2 is modelled to result in a yearly saving of 6,681.2 $kgCO_2e$ or a 50% reduction in patient travel-related carbon emissions. This reduction is driven primarily by consolidating investigations and treatment into a single visit where possible and introducing telephone consultations for results. The streamlined pathway therefore delivers a clear environmental sustainability benefit while maintaining clinical care standards.

In addition, total emissions of 416.3 $kgCO_2e$ are reduced by removing drape and gown from the pathway, providing an overall **annual saving of 7,098 $kgCO_2e$.**

**Economic Sustainability**

The project has identified **combined annual financial savings of £287,344,** associated with the redesign of the haematuria pathway and optimisation of flexible cystoscopy consumables. No significant capital investment was required to implement the changes, as interventions focused on pathway redesign and improved use of existing resources.

The financial impact of the project is summarised in Table 5 below.

Table 5: Summary of Economic Savings from Pathway Redesign

| Intervention | Basis of Calculation | Annual Saving (£) |
|---|---|---|
| Reduction in saline irrigation (1 L → 500 ml) | £0.45 saving per procedure × 1188 patients | **£534** |

| | | |
|---|---|---|
| Combined Flexi + TULA (avoid second tray) | 30 patients × £60 per tray | **£1,800** |
| Reduced outpatient attendance | 2 avoided visits × £120 × 1,188 patients | **£285,000** |
| Reduction in DNA rates | DNA rate reduced from 8% to 2% (71 fewer DNAs × £160) | **£11,360** |

**Cost savings attributed to specific changes**

1. **Reduction in saline irrigation volume**
   Switching from 1,000 mL to 500 mL saline irrigation bags, where clinically appropriate, resulted in a direct saving of £534 per annum

2. **Reduction in flexible cystoscopy consumables for TULA patients**
   In the traditional pathway, patients requiring Transurethral Laser Ablation (TULA) undergo a diagnostic flexible cystoscopy followed by a second procedure requiring a separate cystoscopy tray. Under the new pathway, flexible cystoscopy and TULA are performed on the same day, eliminating the need for a second tray.

- Estimated cost per cystoscopy tray: £60
- Number of TULA patients: 30 per year
- Annual saving: approximately £1,800

3. **Reduced outpatient appointments through pathway redesign**
   The introduction of the One-Stop Haematuria Clinic reduced the number of hospital attendances from up to four visits to one or two visits for most patients. Using conservative NHS outpatient cost estimates of £120 per attendance, and assuming at least two visits avoided per patient:

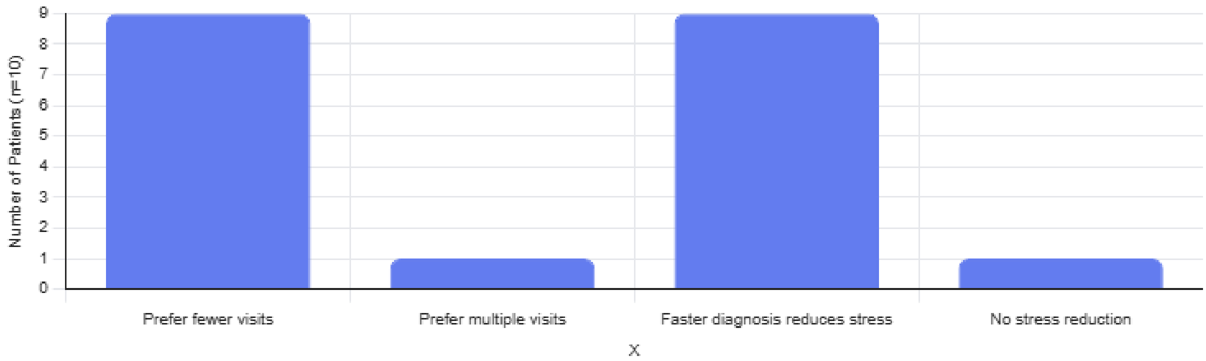
- Saving per patient: £240
- Total patients: 1,188 per year
- Estimated annual saving: approximately £285,000

4. **Reduction in DNA rates**
   The introduction of the One-Stop Haematuria Clinic reduced the DNA rate from 8% to 2%. Based on an annual cohort of 1,188 patients, this equates to a reduction of approximately 71 missed outpatient appointments per year. Given that each missed outpatient appointment is estimated to cost the NHS £160, this represents an estimated annual saving of £11,360. In addition to the financial benefit, reduced DNA rates improve clinic utilisation, increase appointment availability for other patients, and support more timely diagnosis and treatment.

### Social Sustainability

Qualitative data was collected through early patient engagement questionnaires and informal feedback from patients attending the haematuria pathway. Feedback indicated a strong preference for reducing the number of hospital visits, with patients reporting that multiple appointments were inconvenient and contributed to increased anxiety. Patients valued the concept of a one-stop clinic, particularly the opportunity to receive investigations and results more quickly, which reduced uncertainty and psychological distress see (Figure 3).

Figure 3. Patient Questionnaire



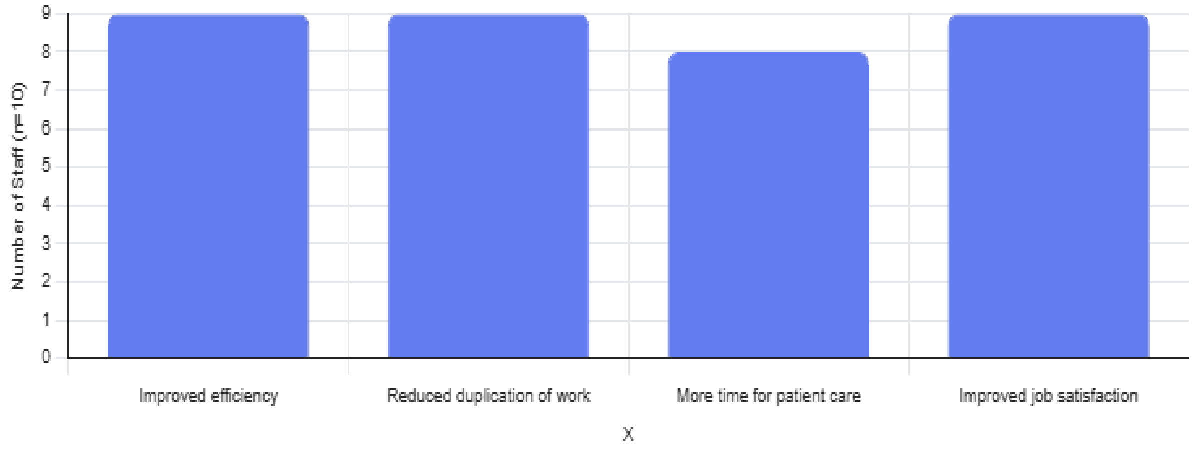

From a quantitative perspective, the redesigned pathway reduces the number of hospital attendances from up to four visits to one or two visits for most patients. Given a cohort of 1,188 patients per year, this represents a substantial reduction in total patient journeys and associated time burden.

The project has had a positive impact on the social circumstances of patients and their carers. The haematuria population has a mean age of approximately 81 years, with many individuals reliant on relatives or carers for transport. Reducing hospital visits decreases the need for carers to take time off work, lowering the financial and social burden on families. Patients could save up to £52.95 per travel and up to £125,808.25 annually from avoided travel. This is likely to improve overall wellbeing, reduce disruption to employment and daily activities, and support greater independence for patients.

For patients, fewer hospital visits reduce travel fatigue, waiting times, and stress associated with repeated appointments. The introduction of telephone consultations for results in appropriate cases further reduces inconvenience and allows patients to receive reassurance in a timely and accessible manner.

Staff also reported social benefits, including improved clinic efficiency and reduced duplication of work. This allowed more time to focus on direct patient care and other clinical duties, contributing to improved workflow and job satisfaction (see figure 4).

Figure 4. Staff Survey




**Population Outcomes**

Since the introduction of the One-stop Haematuria Clinic on 5 May 2026, the redesigned pathway has begun to demonstrate early improvements in accessibility, efficiency, and engagement at a population level, particularly for an older patient cohort.

The haematuria population served by the service has a mean age of approximately 81 years, with many patients reliant on relatives or carers for transport. The implementation of the one-stop model has reduced the number of hospital attendances for most patients from up to four visits to one or two visits. This has improved access to care by reducing the logistical challenges associated with repeated hospital appointments, particularly for patients with reduced mobility or limited social support.

A notable early impact of the redesigned pathway has been a reduction in the number of missed appointments (Did Not Attend – DNA rates) from about 8% to about 2%. By consolidating investigations into a single visit and reducing the need for multiple appointments, patients are less likely to miss scheduled care. This improvement is likely driven by reduced travel burden, fewer scheduling conflicts, and increased clarity of the patient journey. Reduced DNA rates support more efficient use of clinical capacity and ensure that a greater proportion of patients complete their diagnostic pathway in a timely manner.

The streamlined pathway has also enabled more timely completion of investigations, supporting improved adherence to the Faster Diagnosis Standard (FDS). Earlier diagnosis or exclusion of bladder cancer is expected to contribute to improved outcomes at a population level over time.

Furthermore, the reduction in repeat visits helps mitigate health inequalities. Patients who previously faced barriers related to transport, work commitments, or reliance on carers are more likely to engage with and complete their care pathway under the new model.

Although long-term population level outcomes, such as stage at diagnosis and survival rates, are not yet available, early operational changes indicate a shift towards a more accessible, equitable, and efficient service. Ongoing monitoring will be required to assess sustained improvements in population health outcomes.

## Discussion

This SusQI project demonstrates that redesigning the haematuria diagnostic pathway through the introduction of a One-Stop Haematuria Clinic, alongside targeted reductions in consumables used in flexible cystoscopy, can deliver meaningful improvements across clinical care, population access, environmental sustainability, economic efficiency, and social outcomes.

From a clinical perspective, consolidating investigations into a single visit has improved the timeliness and coordination of care. The redesigned pathway supports improved adherence to the Faster Diagnosis Standard (FDS) by reducing delays caused by sequential appointments, enabling patients to receive a diagnosis or exclusion of cancer more promptly. Clinical safety has been maintained throughout, with no compromise to diagnostic quality or procedural standards.

At a population level, the pathway has improved accessibility for an older cohort, many of whom rely on carers. The reduction in hospital visits has decreased logistical barriers to accessing care and has also contributed to a reduction in Did Not Attend (DNA) rates, improving efficiency and ensuring more patients complete their diagnostic pathway. These changes support more equitable access to services and may contribute to earlier diagnosis at a population level over time.

The environmental impact of the project is substantial. The redesigned pathway achieved a 50% reduction in patient travel-related emissions, equating to a saving of approximately 6,681.2 $kgCO_2e$ annually. Additional savings from the removal of disposable drapes and reduced use of reusable patient gowns increased total **savings to approximately 7,098 $kgCO_2e$ per year**. This highlights the significant contribution that pathway redesign can make toward NHS Net Zero ambitions.

Economically, while direct consumable savings were modest (£534 per year from saline reduction and approximately £1,800 from reduced tray use), the primary financial benefit arose from reduced DNA rates (£11,360) and reduced outpatient attendances (£285,000). **Delivering a combined yearly saving of £298,704.**

Socially, the project has had a positive impact on patients, carers, and staff. Fewer hospital visits reduce disruption to patients' daily lives and decrease the need for carers to take time off work. Patients reported reduced anxiety and improved experience due to faster diagnosis and fewer appointments. Staff also benefited from improved workflow efficiency, allowing more time for direct patient care.

However, several limitations should be acknowledged. Environmental and financial savings were modelled using assumptions, including average travel distance, outpatient costs, and consumable usage, rather than directly measured in all cases. Long-term clinical outcomes and population-level impacts, such as stage at diagnosis and survival, were not available at this stage due to the recent implementation (May 2026). Further data collection will be required to validate and strengthen these findings over time.

**Barriers and Challenges**

A number of challenges were encountered during implementation. Initial resistance from staff was observed in relation to reducing consumables (e.g. switching to 500 ml saline bags and removing drapes) and the removal of patient gowns. Concerns centred on clinical safety, procedural effectiveness, and patient dignity. These challenges were addressed through staff education, clear communication of evidence, and maintaining clinical flexibility, ensuring that larger saline volumes and gowns remained available where required. This approach helped to build confidence and improve adoption.

Logistical challenges included coordinating multiple investigations within a single clinic visit, particularly alignment with radiology services and ensuring appropriate clinic capacity. These were mitigated through pathway mapping, scheduling adjustments, and ongoing refinement based on feedback.

An additional challenge was ensuring patients were adequately prepared for longer appointments. This was addressed by updating appointment letters and providing clear pre-appointment information.

**Risks**

Potential risks associated with the project were identified and mitigated.

One key risk was that longer single appointments could lead to patient fatigue or clinic delays. While the likelihood of this occurring was moderate, the impact was mitigated by careful patient selection and improved scheduling.

Another potential risk was reduced clinical flexibility due to standardisation of consumables. This was mitigated by ensuring that alternative options (e.g. 1 L saline bags, gowns) remained available where clinically appropriate.

No significant safety risks were identified during implementation, and ongoing monitoring through incident reporting systems and clinical oversight remains in place.

**Relevance and Spread to Other Settings**

This project is highly transferable to other urology services and diagnostic pathways. The principles of consolidating care into a single visit, reducing low-value activity, and optimising resource use can be applied across a range of outpatient and diagnostic services, particularly those with high patient volumes and repeat attendances.

The model is particularly relevant to:

- Other cancer diagnostic pathways
- Outpatient-based procedural services
- Services with high DNA rates or patient travel burden

Next steps to support wider adoption include:

- Continued data collection to evaluate long-term clinical and operational outcomes
- Development of standardised protocols and guidance for implementation
- Sharing findings through Trust governance forums, sustainability networks, and urology professional groups
- Exploration of expansion to other pathways within the department

**Conclusions**

This project demonstrates the practical value of applying Sustainable Quality Improvement (SusQI) principles to redesign a high-volume diagnostic pathway. The introduction of a One-Stop Haematuria Clinic, alongside targeted optimisation of flexible cystoscopy practices, has proven to be a highly useful approach in improving patient experience while reducing environmental and operational inefficiencies. The work highlights how relatively simple service redesign can deliver benefits across multiple domains without compromising clinical safety or quality.

Several key factors contributed to the success of this project. Firstly, strong multidisciplinary collaboration ensured that the pathway redesign was clinically appropriate, feasible, and aligned with service priorities. Secondly, early and continuous staff engagement and education helped to build confidence, particularly when implementing changes to consumables and clinical practice. Thirdly, an iterative test-of-change approach allowed for real-time learning, enabling the team to refine processes such as clinic workflow, patient communication, and consumable use. Finally, incorporating patient feedback ensured that the redesigned pathway remained patient-centred and responsive to real needs.

Important learning also emerged when aspects of the project did not initially work as intended. For example, initial concerns from staff regarding reduced saline volumes, removal of drapes, and changes to patient gown use highlighted the importance of maintaining clinical flexibility and clear communication. Ensuring that alternative options remained available where clinically appropriate was essential in supporting adoption and maintaining safety. Similarly, refinements to appointment communication were necessary to better prepare patients for longer one-stop visits, demonstrating the importance of clear patient information in service redesign.

To ensure lasting change, several steps have been taken. The One-Stop Haematuria Clinic has been embedded into routine service delivery since May 2026, supported by updated clinic processes, staff education, and patient information materials. Ongoing monitoring of key performance indicators—including FDS compliance, patient experience, DNA rates, and clinic efficiency—will help sustain improvements over time. Continuous feedback mechanisms remain in place to allow further refinement where needed.

The organisation has clear opportunities to build on and expand this initiative, particularly by:

- Extending the one-stop model to other urological pathways.
- Further optimising outpatient services with high repeat attendance.
- Embedding sustainable practice into routine clinical decision-making.

Future expansion will depend on sustained clinical engagement, available clinic capacity, and continued alignment with organisational priorities.

There is also potential to share and spread learning beyond the organisation, through presentation at governance meetings, Green Team forums, and wider urology networks. The model could be adapted and replicated in other Trusts to support national NHS Net Zero ambitions.

Moving forward, further data will be collected to evaluate long-term outcomes, including cancer staging at diagnosis, treatment timelines, patient satisfaction, and sustained reductions in carbon emissions and resource use. Additional work may also explore wider cultural change, including staff engagement with sustainability initiatives and integration of SusQI into routine clinical practice.

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**Critical success factors**

Please select **one or two** of the below factors that you believe were most essential to ensure the success of your project changes.

| **People** | **Process** | **Resources** | **Context** |
|---|---|---|---|
| ✓ Patient involvement and/or appropriate information for patients - to raise awareness and understanding of intervention<br><br>☐ Staff engagement<br><br>☐ MDT / Cross-department communication<br><br>☐ Skills and capability of staff<br><br>✓ Team/service agreement that there is a problem and changes are suitable to trial (Knowledge and understanding of the issue)<br><br>☐ Support from senior organisational or system leaders | ✓ clear guidance / evidence / policy to support the intervention.<br><br>☐ Incentivisation of the strategy – e.g., QOF in general practice<br><br>☐ systematic and coordinated approach<br><br>☐ clear, measurable targets<br><br>☐long-term strategy for sustaining and embedding change developed in planning phase<br><br>✓ integrating the intervention into the natural workflow, team functions, technology systems, and incentive structures of the team/service/organisation | ☐ Dedicated time<br><br>☐ QI training / information resources and organisation process / support<br><br>☐ Infrastructure capable of providing teams with information, data and equipment needed<br><br>☐ Research / evidence of change successfully implemented elsewhere<br><br>☐ Financial investment | ☐aims aligned with wider service, organisational or system goals.<br><br>✓ Links to patient benefits / clinical outcomes<br><br>☐ Links to staff benefits<br><br>☐ 'Permission' given through the organisational context, capacity and positive change culture. |